Medical Waste Management
& Infection Control

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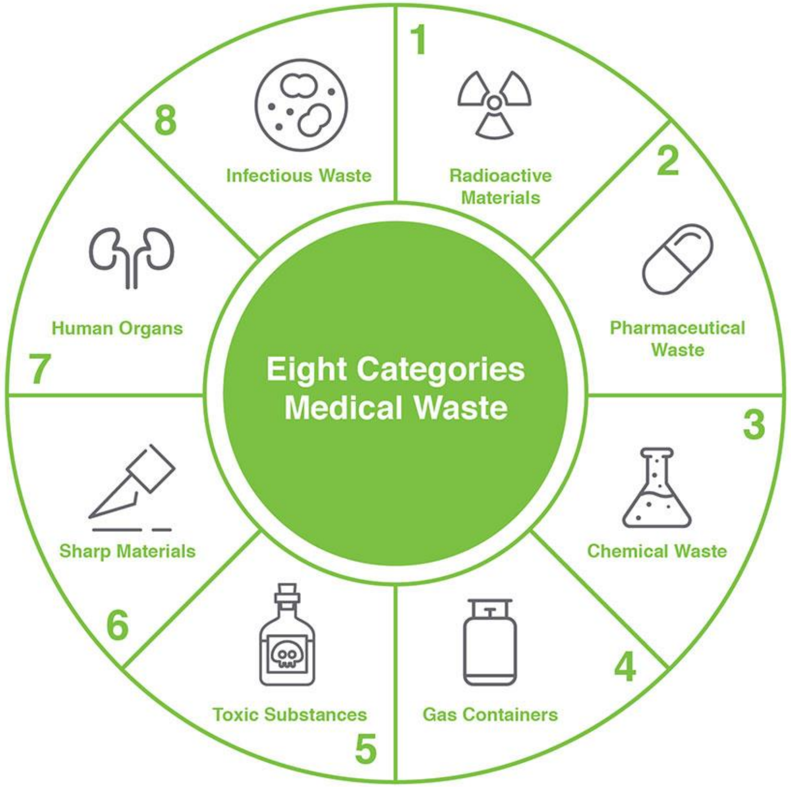
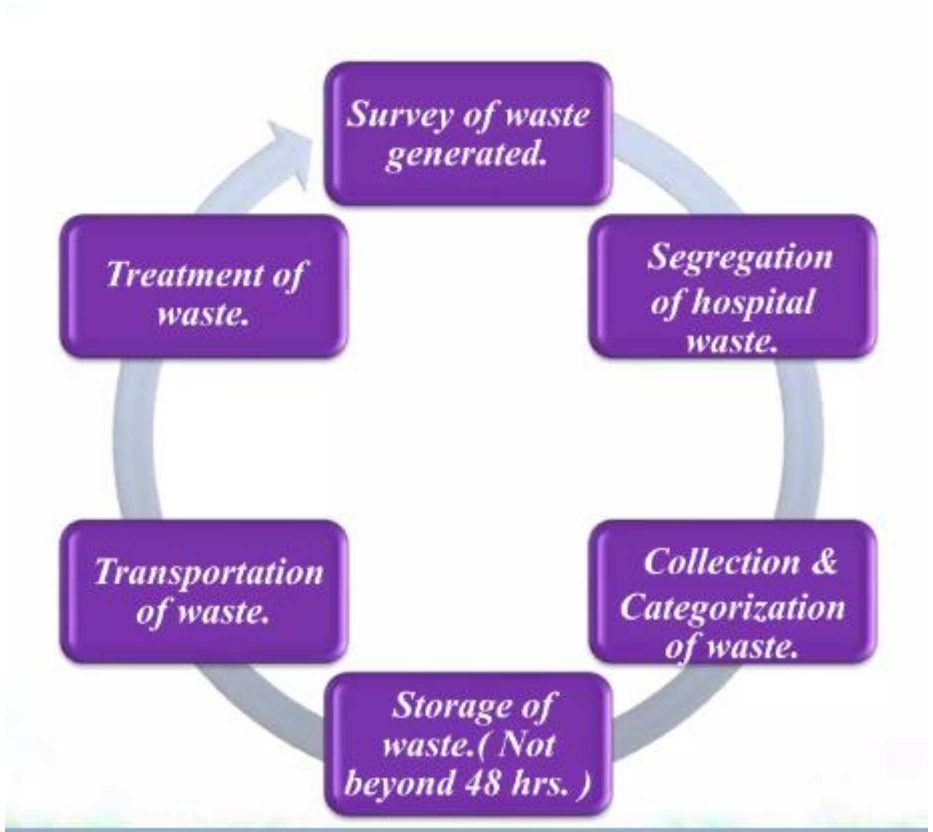
Medical Waste

- ✓Medical Waste Management
- ✓Definition of Medical Waste
- ✓Segregation
- ✓Signs and Labels
- ✓Collection, Treatment and Disposal of Medical Waste
- ✓Sterilization and Disinfection Techniques



What is Waste Management?

Waste management is the process of segregating, collecting, disposing or recycling, and monitoring of waste materials.



Survey of waste generated.

Segregation of hospital waste.

Collection & Categorization of waste.

Storage of waste.(Not beyond 48 hrs.)

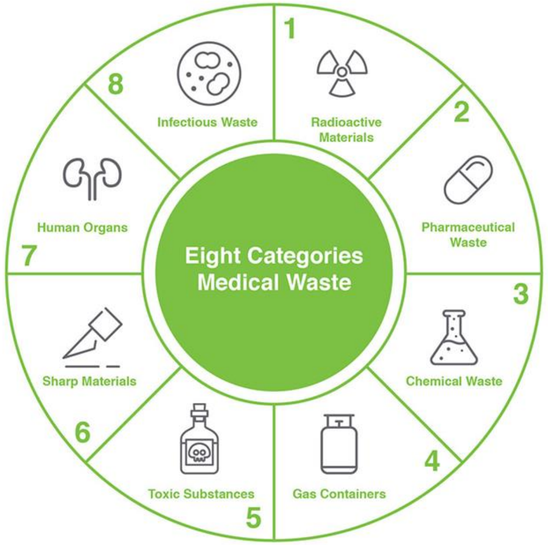
Transportation of waste.

Treatment of waste.

Segregation

- Segregation **refers to the basic separation of different categories of waste generated at source and thereby reducing the risks as well as cost of handling and disposal**.
- Segregation is the most crucial step in bio-medical waste management.
- Effective segregation alone can ensure effective biomedical waste management.

What is medical waste



Medical waste is a subset of wastes generated at health care facilities, such as hospitals

Generally, medical waste is healthcare waste that may be contaminated by blood, body fluids or other potentially infectious materials.

What is the Importance of Healthcare Waste Management?

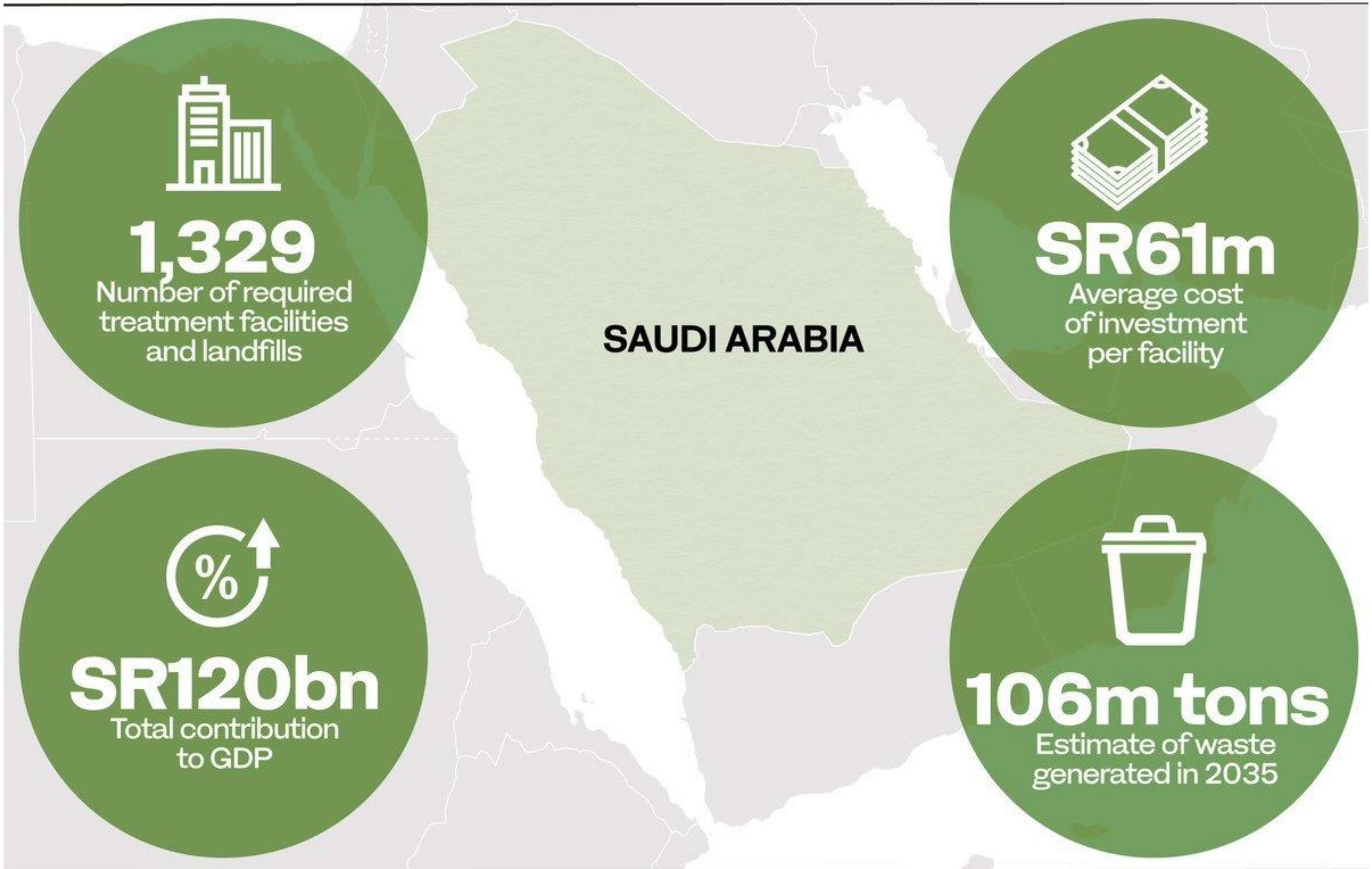
Healthcare waste management refers to waste generated from health care facilities, hospitals, laboratories and other diagnostic facilities.

Health care institutions play an important role in safeguarding health but the waste generated also need to be accounted for.

Of the waste generated, 85% are non-hazardous while the rest 15% are infectious, toxic or radioactive.

KSA WASTE MANAGEMENT OUTLOOK

Projected economic impact of proper waste management by 2035



1,329
Number of required treatment facilities and landfills

SR61m
Average cost of investment per facility

SR120bn
Total contribution to GDP

106m tons
Estimate of waste generated in 2035

ARAB NEWS

Importance

- The incorrect treatment and disposal of medical waste will cause serious secondary disease propagation risk.
- **B**ecause garbage collection workers, waste workers, medical workers, patients, and the entire community may be exposed to infection sources due to improper waste disposal.

The Health Impacts of Health Care Waste?

- **Exposure to toxic chemicals** like mercury, xylene and formalin can result in **chemical injuries** among health personnel and patients in contact.
- **Microorganisms** can come into contact with health care personnel and patient bystanders due to exposure to surfaces that are soiled with infected body fluids.
- Improper disposal and lack of properly designed landfills result in **contamination of water and exposure to toxic wastes.**
- Inadequate incineration can result in **toxic air pollution**; the failure to use proper filters adds to the release of such pollutants into the air.

- **Who has responsibility for health and safety at your place of work?**
  a) The client and main contractor only
  b) Self-employed contractors only and employees
  c) Employers, employees and sub-contractors
  ✓ d) Everyone at your place of work no matter who employs them

Why should regular inspections of the workplace take place?

✓ a) To check whether the working environment is safe

b) To check everyone is doing their job

c) To prepare for a visit from CBAHI

d) To check that all staff are present and correct

Lack of segregation of the biomedical wastes can risk an exposure to sharps among the workers of waste disposal and treatment.

- Open waste dumping results in piling up of the waste which attracts insects; these dumps during the rains become breeding areas for the insects and as sources for vectors which **spread infectious disease**.

- Pouring of the antibiotics into the drain results in the **killing of required microbes and altering the environment that helps in the breakdown of biological matter in septic tanks.**

Types of Hospital Waste

Risk Waste

- Infectious waste
- Pathological waste
- Sharps
- Pharmaceutical waste
- Genotoxic waste
- Chemical waste
- Radioactive waste

Non-Risk Waste

- Paper and cardboard.
- Packaging.
- Food waste,
- Aerosols. (spray)

Description of medical waste

The term “medical waste” covers all wastes produced in health-care or diagnostic activities.

75 % to 90 % of hospital wastes are
similar
to **household refuse** or municipal waste
and
do not entail any particular hazard

Refuse similar to household waste can be put through the same collection, recycling and processing procedure as the community’s municipal waste.

The other 10% to 25% is called hazardous medical waste or special waste. This type of waste entails health risks.

What are the Types of Medical Waste?

The types of medical wastes are:

- **Infectious wastes:** These are materials contaminated by body fluids, cultures and stocks of infectious organisms, and patient wastes from isolation wards
- **Pathological waste:** These include tissue material of humans, organs, fluids, and animal carcass
- **Sharps waste:** These include used needles, syringes, disposable scalpels and blades
- **Chemical waste:** Materials like heavy metals in devices, solvents in laboratory reagents and detergents
- **Pharmaceutical waste:** Waste materials that include unused, contaminated, expired drugs and vaccines
- **Genotoxic waste:** Hazardous, mutagenic, carcinogenic and cytotoxic drugs in cancer treatment and metabolites
- **Radioactive waste:** Products including radioactive diagnostic and therapeutic materials
- **Non-hazardous waste:** Materials that are not biological, chemical or radioactive hazards

What is E-Waste Management?

E-waste or electronic waste management is the collection and disposal of electrical and electronic equipment.

It requires formal disposal methods.

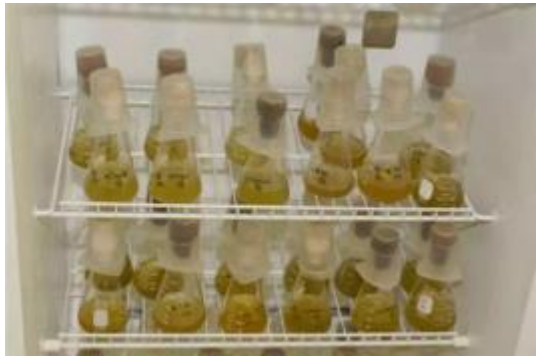
The main sources of E-waste in healthcare include:

- Information and communication technology equipment used in hospitals
- Patient monitors such as heart rate, breathing rate and blood pressure monitors
- Sterilizer, Surgical light and Defibrillator
- Electrocardiogram and digital sphygmomanometer

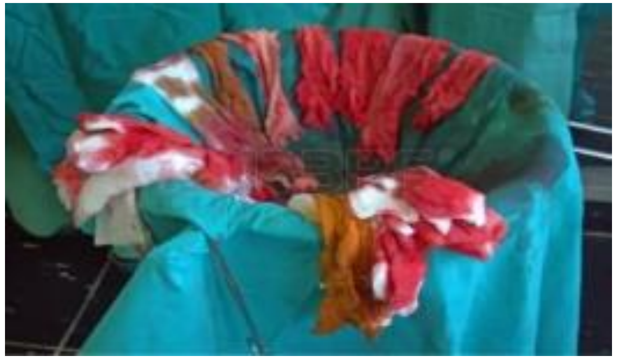
Infectious waste:

- It is a medical waste carrying a pathogenic microorganism with a risk of danger of infectious diseases.
- Waste masks, gloves, shoe covers, protective clothing belong to this category.

- Each Infectious medical waste generator will segregate Infectious from non- Infectious waste at the generation site.
- The waste generator will be responsible for segregation and collection of waste in containers specially made for this purpose within departments.



Lab Cultures



Surgery on patient with inf. disease

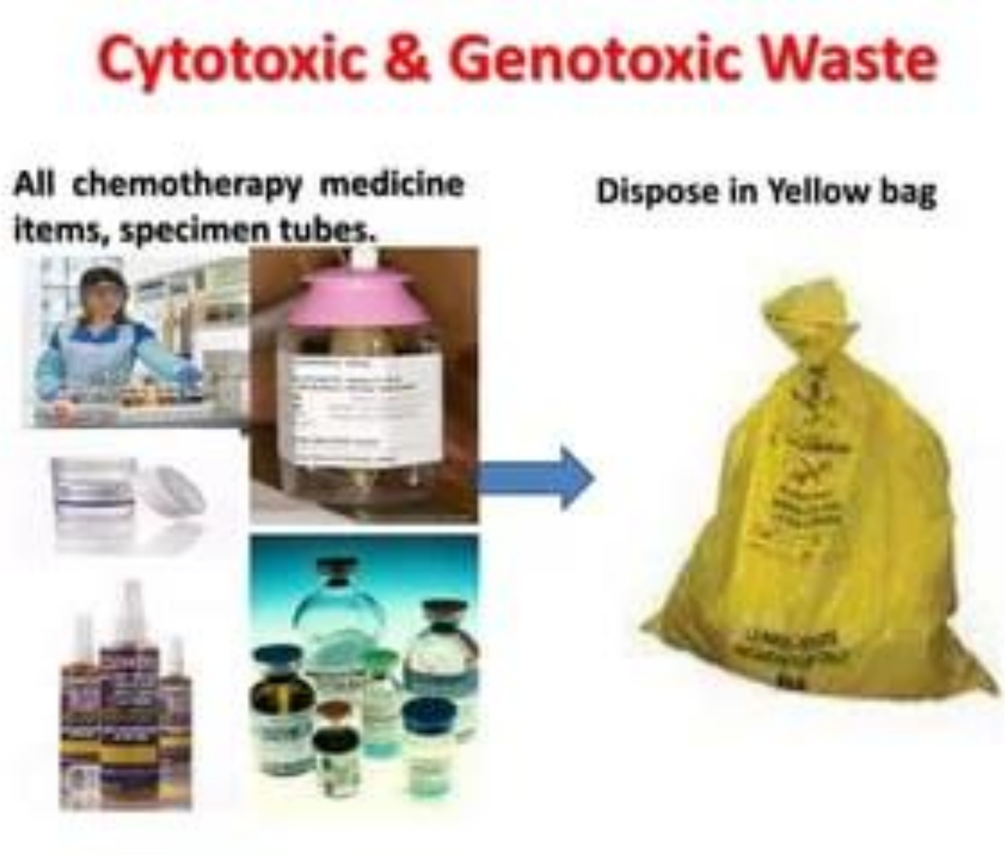
Pathological waste

Sharps waste

Chemical waste

Pharmaceutical waste

Genotoxic waste



Cytotoxic & Genotoxic Waste

All chemotherapy medicine items, specimen tubes.

Dispose in Yellow bag

Radioactive waste

Non-hazardous waste

Why do we need to dispose medical waste?

- **Hazard of medical waste:**

1) Medical waste contains a large number of pathogenic microorganisms

2) If the medical waste is arbitrarily stacked ………..

Reduction in land resources

Large number of toxic waste resides

or waste liquids are exiled everywhere in nature…resulting in **soil** pollution.

3) Medical waste will pollute the **water** in a variety of ways

4) Medical waste In the stacking process, under temperature, and moisture, some organic substances have decomposed, resulting in harmful gases, and causing **atmospheric pollution**.

Treatment of medical waste

Incineration

- What is incineration treatment?
- Incineration is the process of burning hazardous materials at temperatures high enough to destroy contaminants.

Most hazardous waste incinerators are operated at 980/C to 1200/C (1800/F to 2200/F)

In Summary

The proper management of medical waste depends on:

- Good organization
- Sufficient funding
- Active participation of informed and trained personnel.

Those are the preconditions for the consistent application of measures throughout the waste chain (from where it is generated to where it is eventually disposed of).

Thank You